



Sections 4.1 through 4.3 provide information and documents related to the CD-3b submittal. Documents provided herein include:

- DOE letter authorizing the project to proceed with the CD-3b work scope
- List of the CD-3b documents submitted to the Agencies
- Information copy of the comment resolution sheets from the Agency review of the CD-3b submittal



# memorandum

Date: May 20, 2002

Subject: Approval of Critical Decision (CD) 3b for the Glovebox Excavator Method (GEM) Project--  
(EM-ER-02-089)

To: Warren E. Bergholz, Jr., Acting Manager

Through: Jerry Lyle, Assistant Manager, Environmental Management *with for*  
William H. Leake, Jr., Director, Infrastructure & Environmental Restoration *with*

From: Jeff Snook, Project Manager, Operable Unit (OU) 7-10 GEM Project *JS*

**Issue:** The project has advanced to the point of procurement and construction of the flooring, shoring box, weather enclosure, and construction of the retrieval confinement structure (RCS). This stage, termed 3b, will provide permission to move forward with these activities. The estimated cost for this phase is \$1.46M.

**Background:** The OU 7-10 GEM Project will demonstrate safe and effective retrieval of transuranic waste from a specified and preselected area of Pit 9 in the subsurface disposal area (SDA).

CD 0 was approved October 2001 and reaffirmed by the ID Acting Manager on February 11, 2002. The baseline range and beginning of detailed design were approved by CD 1 on February 13, 2002. CD 3a was signed April 18, 2002, and approved acquisition of critical facility equipment, site development, and connection to site utilities. The mission need has been reaffirmed by the dispute resolution settlement agreement (attached) signed April 18, 2002.

Additional DOE concerns on the contractor's preliminary documented safety analysis (PDSA), which were discussed in the CD 3a ESAAB, are being adequately resolved. There appear to be no obstacles to finalizing the DSA. Precautions are being taken to ensure no waste will be encountered during excavation in the SDA for installation of the shoring box. There is no longer a need for a glovebox fire system equivalency determination due to changing the materials for the windows, thus allowing use of UL-listed components. A mockup is being constructed at the cold test pit south so excavation processes can be finalized and validated.

In compliance with DOE Order 413.3, a DOE-ID independent project review (IPR) team reviewed the project's readiness to proceed with phase 3b items. The IPR team identified one issue with a change to the project's construction strategy. Rather than using a subcontractor to assemble the structures, the contractor plans on using direct-hire (force account) personnel. The IPR team felt this decision was inadequately documented and the risks had not been fully analyzed. In response to their concern, the contractor has improved the decision analysis documentation, and analyzed these risks further. New risk statements have been prepared, and the associated risk mitigation plans have been developed. The contractor has determined use of force account personnel is the correct decision because:

May 20, 2002

Warren E. Bergholz, Jr.

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1. All materials in the scope of installation are being procured by BBWI anyway in order to meet the schedule.
2. This approach provides greater schedule flexibility if materials are received earlier or later.
3. QA oversight and control by BBWI would be required anyhow since the subcontractors do not have NQA-1 programs.

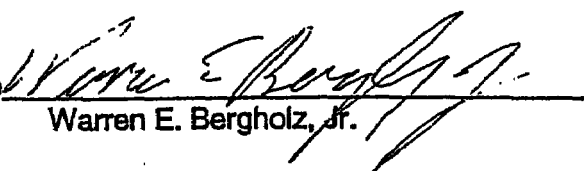
The IPR's project definition rating index (PDRI) score was 98.5% and the team recommended the project, "... proceed with Partial Critical Decision-3b, for procurement and structural installation activities in support of the accelerated schedule for the Glovebox Excavator Method retrieval demonstration project for Pit-9."

**Sensitivity:** Settlement of the OU 7-10 dispute has been achieved. Continued progress towards satisfactory excavation and retrieval of Pit 9 waste materials is required to meet the requirements of the settlement agreement and to avoid \$5 million in fines.

**Policy Impact:** None

**Recommendation:** Approve CD 3b.

Approve

  
Warren E. Bergholz, Jr.

Date

5/20/02

Disapprove

Date

Attachment

#### 4.2 CD-3b Table of Documents

## **OU 7-10 Glovebox Excavator Method Project CD 3b Deliverables List**

### **Weather Enclosure Structure (WES) Package**

#### **Specifications**

SPC-364, Revision 0, A-E Performance Specification: OU 7-10 Glovebox Excavator Method Project Weather Enclosure Structure

#### **Appendix A – Vendor Data Schedule**

Form 431.14, Revision 0, Vendor Data Schedule for the OU 7-10 Glovebox Excavator Method Weather Enclosure Structure

#### **Appendix B – Drawings**

DWG-519896, Sheet T-1, OU 7-10 Glovebox Excavator Method Project Weather Enclosure Structure (WES) Site Map, Area Map and Drawing Index

DWG-519897, Sheet A-1, OU 7-10 Glovebox Excavator Method Project Weather Enclosure Structure (WES) Floor Plan

DWG-519898, Sheet A-2, OU 7-10 Glovebox Excavator Method Project Weather Enclosure Structure (WES) Elevations

DWG-519899, Sheet A-3, OU 7-10 Glovebox Excavator Method Project Weather Enclosure Structure (WES) Elevations

DWG-519900, Sheet A-4, OU 7-10 Glovebox Excavator Method Project Weather Enclosure Structure (WES) Sections

DWG-519901, Sheet A-5, OU 7-10 Glovebox Excavator Method Project Weather Enclosure Structure Details and Section

#### **Appendix C – Calculations (FOR INFORMATION ONLY)**

EDF-2106, Revision 0, Weather Enclosure Structure Analysis and Loading Criteria

#### **Appendix D – Retrieval Confinement Structure Reference Drawings (FOR INFORMATION ONLY)**

DWG-519889, Sheet A-1, OU 7-10 Glovebox Excavator Method Project Retrieval Confinement Structure Floor Plan and Legends

DWG-519893, Sheet A-5, OU 7-10 Glovebox Excavator Method Project Retrieval Confinement Structure Views

DWG-519941, Sheet FP-1, OU 7-10 Glovebox Excavator Method Project WES/RCS/PGS General Notes, Legend, Abbreviations, and Acronyms

DWG-519942, Sheet FP-3, OU 7-10 Glovebox Excavator Method Project WES Isometric

DWG-519943, Sheet FP-4, OU 7-10 Glovebox Excavator Method Project WES Upper Plan

DWG-519944, Sheet HV-3, OU 7-10 Glovebox Excavator Method Project WES/RCS/PGS Facility Ventilation Isometric

DWG-519945, Sheet HV-4, OU 7-10 Glovebox Excavator Method Project WES/RCS/PGS Facility Ventilation Isometric

## **OU 7-10 Glovebox Excavator Method Project CD 3b Deliverables List**

DWG-519939, Sheet E-1, OU 7-10 Glovebox Excavator Method Project Weather Enclosure  
Structure Lighting Plan, Information Only

DWG-519940, Sheet E-2, OU 7-10 Glovebox Excavator Method Project Weather Enclosure  
Structure Lighting Section, Information Only

### **Facility Floor Structure Fabrication Package**

#### **Construction Specification**

SPC-366, Revision 0, A-E Construction Specification: OU 7-10 Glovebox Excavator Method Project  
Facility Floor Structure Fabrication

#### **Vendor Data Schedule**

Form 431.14, Revision 0, Vendor Data Schedule for the OU 7-10 Glovebox Excavator Method Facility  
Floor Structure

#### **Drawings**

DWG-519907, Sheet T-1, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Site Map, Area Map and Drawing Index

DWG-519908, Sheet S-1, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Floor Design Loading Plan

DWG-519909, Sheet S-2, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Floor Framing Plan

DWG-519910, Sheet S-3, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Lower Framing Plan

DWG-519911, Sheet S-4, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Upper Framing Plan

DWG-519912, Sheet S-5, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Large Scale Lower Framing Plan

DWG-519913, Sheet S-6, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Large Scale Upper Framing Plan

DWG-519914, Sheet S-7, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Welded Steel Member Assembly

DWG-519915, Sheet S-8, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Large Scale Plans – Glovebox 1 & 2

DWG-519916, Sheet S-9, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS)  
Large Scale Plan – Glovebox 3

DWG-519917, Sheet S-10, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure  
(FFS) Floor Plate Plan

DWG-519918, Sheet S-11, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure  
(FFS) Plate Area Without Decking Underneath

DWG-519919, Sheet S-12, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure  
(FFS) Plate Area With Decking Underneath



## **OU 7-10 Glovebox Excavator Method Project CD 3b Deliverables List**

DWG-519920, Sheet S-13, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Decking Plan

DWG-519921, Sheet S-14, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Sections, Details, and Schedule

DWG-519922, Sheet S-15, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Sections

DWG-519923, Sheet S-16, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Sections

DWG-519924, Sheet S-17, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Connection Details and Sections

DWG-519925, Sheet S-18, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Shoring Plan, Details, and Views

DWG-519926, Sheet S-19, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Shoring Sections, Details, and View

DWG-519927, Sheet S-20, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Lifting Lug Plan and Details

DWG-519930, Sheet E-1, OU 7-10 Glovebox Excavator Method Project Facility Floor Structure (FFS) Electrical Conduit Installation Plan

DWG-519889, Sheet A-1, OU 7-10 Glovebox Excavator Method Project Retrieval Confinement Structure Floor Plan and Legends

DWG-519897, Sheet A-1, OU 7-10 Glovebox Excavator Method Project Weather Enclosure Structure (WES) Floor Plan

### **Facility Structures Package**

#### **Construction Specification**

SPC-367, Revision 0, A-E Construction Specification: OU 7-10 Glovebox Excavator Method Project Facility Structures

#### **Vendor Data Schedule**

Form 431.14, Revision 0, Vendor Data Schedule for the OU 7-10 Glovebox Excavator Method Facility Structures

#### **Drawings**

DWG-519935, Sheet T-1, OU 7-10 Glovebox Excavator Method Project Facility Structure Site Map, Area Map, and Drawing Index

DWG-519936, Sheet C-1, OU 7-10 Glovebox Excavator Method Project Facility Structure Plot Plan and Existing Elevations

DWG-519937, Sheet C-2, OU 7-10 Glovebox Excavator Method Project Facility Structure Plan and Sections

DWG-519938, Sheet A-1, OU 7-10 Glovebox Excavator Method Project Facility Structure Floor Plan

## **OU 7-10 Glovebox Excavator Method Project CD 3b Deliverables List**

**NOTE 1:** FFS Fabrication drawings are also part of this package.

**NOTE 2:** WES and RCS drawings are included in this package for information only.





July 2, 2002

CCN 33958

Mr. Jeffrey G. Snook  
Project Manager  
U.S. Department of Energy  
Idaho Operations Office  
850 Energy Drive, Mail Stop 1222  
Idaho Falls, ID 83401-1563

CONTRACT NO. DE-AC07-99ID13727 - OPERABLE UNIT 7-10 GLOVEBOX EXCAVATOR  
METHOD PROJECT RESPONSE TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY  
AND IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY COMMENTS ON THE  
CRITICAL DECISION 3B DESIGN PACKAGE

Reference: W. Pierre letter to K. Hain, ECL-113, Review of Operable Unit 7-10 CD 3b  
Weather Enclosure Structure, Facility Floor Structure Fabrication Package &  
Facility Structures Package, June 3, 2002

Dear Mr. Snook:

Enclosed are the Bechtel BWXT Idaho, LLC responses to the U.S. Environmental Protection  
Agency comments that were transmitted via the above reference.

If you have any questions or comments, please contact Mike Pratt at 526-5565 or me at 526-3029.

Sincerely,

John M. Schaffer  
Acting Manager of Projects, WAG 7  
Environmental Restoration

JAC:mp

Enclosure

cc: (w/o Encl)  
C. D. Cutler, MS 3810  
P. H. Divjak, MS 3898  
R. J. Hoyles, DOE-ID, MS 1221  
K. C. O'Neill, (w/ Encl), DOE-ID, MS 1222  
B. D. Shipp, MS 3898  
S. G. Stiger, MS 3898

Mr. Jeffrey G. Snook  
July 2, 2002  
CCN 33958  
Page 2

bcc: (w/o Encl)  
J. D. Bryan, MS 3920  
J. A. Cole, MS 3920  
S. A. Davies, MS 3920  
T. M. Dicken, (w/ Encl), MS 3920  
M. B. Pratt, MS 3920  
ARDC Files, (w/ Encl), MS 3922  
Correspondence Control, MS 3106  
OU 7-10 Project File (w/ Encl)  
J. M. Schaffer File  
D. K. Jorgensen Letter File (DKJ-138-02)

Uniform File Code: 6400

Disposition Authority: ENV1-k-2-b

Retention Schedule: Cutoff at project completion. Destroy 25 years after project completion. EPI

NOTE: Original disposition authority, retention schedule, and Uniform Filing Code applied by the sender may not be appropriate for all recipients. Make adjustments as needed.

**OU 7-10 Glovebox Excavator Method Project - Responses to Agency Comments on the  
CD-3b - Structural Package**  
Page 1 of 3

- SPC-366: Facility Floor Structure Fabrication, Revision ID: 0, May 10, 2002
- SPC-364: Weather Enclosure Structure, Revision ID 0, May 10, 2002
- SPC-367: Facility Structures, Revision ID 0, May 10, 2002

REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	01	SPC-366	Section 05060, Page 7 of 8	01. The specifications state that all welds will only receive a visual inspection. Additional non-destructive weld testing such as: Magnetic Particle Testing (ASTM E709) on the fillet welds and Ultrasonic Inspection (ASTM E164) on full penetration welds, should be required. It is also important to specify testing for the critical connections and a percentage of other connections.	Per the specification and consistent with the requirements for full penetration welds per the IBC, AWS D.1.1 and AISC, 100% visual inspection is required for all welds. None of the critical connections are highly stressed during normal loading conditions and there are no highly stressed connections with high cycle loads during abnormal conditions. Therefore, no additional testing is required.
EPA	02	SPC-366	Section 05100, Page 2 of 6, Line 29	02. Need to include a requirement in this specification that the fabricator participate in the AISC Quality Certification Program and be designated an AISC Certified Plant with Category II ranking, Complex Steel Building Structures.	BBWI's contract with DOE-ID requires that the BBWI quality program be flowed down to subcontractors. The subcontract, therefore, requires the fabricator to have an NQA-1 quality program. The AISC certification is not necessary, but could be considered for equivalency in the event that the selected subcontractor/fabricator does not have a NQA-1 quality program.
EPA	03	SPC-366	Section 05100, Page 5 of 6, Line 34	03. Please modify the statement "Do not paint surfaces... with "slip critical" bolted connections." Please add - Do not paint faying surfaces on "slip critical" bolted connections.	Drawing number 519921 (S-14) requires all slip critical joints to have Class A surfaces. No change to the specification is necessary.
EPA	04	SPC-366	Section 05100, Page 4 of 6, Line 23 to 32	04. Please include bolt lubricant in the specification. Is Molybdenum disulfide base acceptable?	Bolting is required to comply with the "Specification for Structural Joints Using ASTM A325 and A490 Bolts". All slip critical joints are required to conform to ASTM F1852. The acceptability of a molybdenum disulfide base is not known since the lubricant must conform to the requirements of the specific bolt manufacturer and, until the subcontract is awarded, the bolt manufacturer is not known. It is standard practice for the bolt manufacturer to supply the lubricant. Upon award, the bolt and lubricant can be reviewed for acceptability for meeting the previously mentioned requirements. No change to the specification is necessary.
EPA	05	SPC-366	Section 05100, Page 4 of 6, Line 23 to 32	05. Please include specifications for Carbon and Alloy Steel Nuts (ASTM A653) and Hardened Steel Washers (ASTM F436), if these are acceptable.	The appropriate nut and washer specification are included in the ASTM A307, ASTM F1852 and ASTM A325 specifications.
EPA	06	SPC-366	Section 05100, Page 5 of 6, Line 30	06. Please add a specification for "Holes for Other Work". Please include additional guidance on the acceptable methods for creating holes in the webs of the beams to pass through conduits and sleeves.	Hole placement and sizes are as indicated in the drawings. Any method that achieves a fairly smooth and uniform edge to the hole and conforms to AISC requirements is acceptable. No additional guidance is necessary.
EPA	07	SPC-366	Dwg S-9	07. Do the holes that penetrate the beam web need to be reinforced, per AISC and the stresses induced in the members? Pipe sleeves do not reinforce the beam web.	The holes do not need to be reinforced.
EPA	08	SPC-366	Dwg S-14 & S-2, Section BE	08. Can 3" deck and plate combination cantilever 1'-4" with the loads indicated and not permanently deform?	The details referred to are not true cantilevers. The 3/16 plate is supported by the beams on the free end of the decking.
EPA	09	SPC-366	Dwg S-15, Section A and B	09. How far does floor plate extend on top of wide flange beam (W24x94)? Is there a seal weld at this connection or is this a caulk joint?	The extent of the plate is dimensioned on the plate plans S-10, S-11 and S-12. Welding is not required. The plate will be fastened as indicated on S-14. Sealing will be by caulking. However, the joint sealing is not part of this subcontract package and, therefore, is not shown.

**OU 7-10 Glovebox Excavator Method Project - Responses to Agency Comments on the  
CD-3b - Structural Package**

Page 2 of 3

REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	10	SPC-366	Dwg S-15, Section A and B; Dwg S-17, Detail 28; Dwg S-4, Section A and B	10. The sections show no allowance for flange plates. Will the WES attachment angle (L3x2x3/8) be welded to the top moment connection plate? The top of the WES connection angle at the moment connection will not match the top of the connection angle on the rest of the perimeter.	The details of this connection will be clarified the WES subcontract is awarded and we are able to work directly with the WES supplier to resolve specific interfaces and details.
EPA	11	SPC-366	Dwg S-3	11. On the plan, the left side, the seventh horizontal member from top, should the designation be W21x62, not W62X21?	Yes, the designation should be W21x62. This transposition will be corrected.
EPA	12	SPC-366	Dwg S-19	12. Please provide an additional steel plate thickness at the 145 degree angle in the shoring box to protect the corner and 2'0" either side of the corner from accidental puncture during excavation proceedings.	The shoring box has sheet on two sides of the framing except in a small area that has a continuous plate for connection. Puncture of the interior sheet will not cause contamination spread to anything other than the interior framing of the box. Additional plate thickness is not necessary.
EPA	13	SPC-367	General	13. It is not stated in the specification who is responsible to attach the WES, RCS and the PGS to the FFS?	The PGS installation is not part of this specification. The WES and RCS will be attached under this specification (see Section 01005, page 1 of 4, Line 19 and Section 13200, page 1 of 4, Lines 12 - 23). Details for the connections will be provided as part of erection drawings provided by the WES and RCS suppliers.
EPA	14	SPC-367	General	14. Please indicate in the specification that an erection drawing should be provided that is signed and sealed by a registered professional engineer that is licensed to practice civil or structural engineering in the state of Idaho.	The erection drawing is provided by the FFS fabricator as part of SPC-366 and is part of the shop drawing package. Shop drawings do not require a PE stamp. It will be reviewed and approved by the appropriate BBWI design engineers.
EPA	15	SPC-367	General	15. How will the excavator be attached to the FFS? Who will attach the excavator to the FFS? Who fabricates the mounting bracket for the excavator? This information.	The excavator installation is not part of this subcontract. Details for the mounting are provided in CD 2/3 documents.
EPA	16	SPC-367	Section 02200, Page 2 of 4, Line 27	SUGGESTION: 16. Any water in an excavation should be tested before it is disposed.	If the shoring box trench should collect water during installation, that water will be dispositioned per applicable INEEL procedures. No change to the specification is necessary.
EPA	17	SPC-367	Section 02200, Page 2 of 4, Lines 1 to 3 and 14 to 20	17. Where will the soil that is excavated for the trench box and not used as backfill for the trench box stored or disposed of? Will this soil be placed in the "soil sacks" that will be used for the later excavation of the overburden?	Any overburden not used as backfill during shoring box installation will remain within the limits of the excavation area and will be removed to soil sacks during the overburden removal operation. No change to the specification is necessary.
EPA	18	SPC-367	Section 02200, Page 3 of 4, Lines 2 to 3	18. Compaction is specified but no requirements are provided? Is compaction necessary and how will it be achieved? What is the criteria for compaction?	There are no special requirements for compaction. Compaction is not necessary for structural reasons and is only required to prevent voids and sloughing from behind the shoring box during waste retrieval. Backfill behind the shoring box will be hand tamped to minimize the potential for sloughing.
EPA	19	SPC-367	Section 02598	19. How will the geotextile and flexible membrane be placed over the existing probes protruding from the ground?	The tops of most of the probes are below the membrane. We will clarify this for any probes that may have any interference. Some probes have already been shortened. We will shorten others if it is required.
EPA	20	SPC-367	Section 05060	SUGGESTION: 20. Should use low hydrogen electrodes for field welding carbon steel members.	The welding processes called for in the specification require appropriate electrodes to be used.

**OU 7-10 Glovebox Excavator Method Project - Responses to Agency Comments on the  
CD-3b - Structural Package**

Page 3 of 3

REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	21	SPC-364	Page 21, Section 6.3.6	SIGNIFICANT 21. An inlet air louvered penthouse is called for in the design. It is to be located at the peak of the building, centered along the long axis. The penthouse structure will be about 40 feet above ground surface. This is the principal intake for ventilation air. The height of the discharge stack (exhaust air from retrieval enclosure) is about 60 feet above ground surface and located on the southwest corner of the building. Prevailing winds come from the southwest. Having the building air intake located in close proximity (height and distance), and downwind from the exhaust stack, is not good design practice. The air intake should be nearer to ground level. Also, one might lose some of the "chimney effect" of the exhaust stack.	The International Building Code requires that the facility be designed to prevent exhaust from re-entering the facility through inlet air systems. To meet the requirements of the International Building Code, the stack and inlet air systems have been designed in accordance with the applicable requirements of the Industrial Ventilation Manual, the Nuclear Air Cleaning Handbook, and the INEEL Architectural Engineering Standards. These requirements account for the location of the stack at the facility. Stack monitoring systems are designed to alert personnel if unacceptable levels of contaminants are released through the stack. In addition, industrial hygiene monitoring will be performed to alert personnel if unacceptable levels of contaminants are present within the facility. The exhaust stack and inlet air systems design is documented in project files. As discussed in the June 20, 2002, Agency teleconference, the current design is in accordance with required codes and recommended practices to prevent exhaust from re-entering the facility. No change to the specification is necessary.





Sections 5.1 through 5.4 provide information and documents related to the CD-2/3 submittal. Documents provided herein include:

- DOE letter authorizing the project to proceed with the CD-2/3 work scope
- List of the CD-2/3 documents submitted to the Agencies
- Information copy of the comment resolution sheets from the Agency review of the CD-3a submittal
- Revised SPC-401, *Backhoe Modifications for the OU 7-10 Glovebox Excavator Method Project*, and Dwg. #519931, *Excavator Modifications*, sheets 1, 2, 3, 4, and 6, are being resubmitted because of significant changes. SPC-401 was revised to include new work scope and Dwg. #519931 was revised to reflect a modification in the drum weighing system (i.e., from a digital to an analog device).

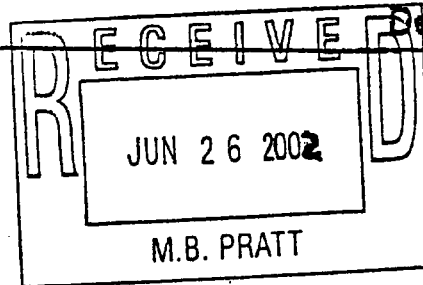


United States Government

Department of Energy

## memorandum

Idaho Operations Office



Date:

Subject: Approval of Critical Decision (CD) 2/3 for the Glovebox Excavator Method (GEM) Project—  
(EM-ER-02-105)

To: Warren E. Bergholz, Jr., Acting Manager

Through: ~~Mark~~ Jerry Lyle, Assistant Manager, Environmental Management  
William H. Leake, Jr., Director, Infrastructure & Environmental Restoration  
Edward J. Ziemainski, Director, Waste Management Division

From: Jeff Snook, Project Manager, Operable Unit (OU) 7-10 GEM Project

**Issue:** The project has advanced to the point of baseline approval and full construction activities. This stage, termed CD 2/3, will provide permission to move forward with these activities. The estimated cost for this phase is \$29.6M.

**Background:** The OU 7-10 GEM Project will demonstrate safe and effective retrieval of transuranic waste from a specified and preselected area of Pit 9 in the subsurface disposal area (SDA).

CD 0 was approved October 2001 and reaffirmed by the ID Acting Manager on February 11, 2002. The baseline range and beginning of detailed design were approved by CD 1 on February 13, 2002. CD 3a was signed April 18, 2002, and approved acquisition of critical facility equipment, site development, and connection to site utilities. CD 3b was signed on May 20, 2002 and approved construction of the flooring, shoring box, retrieval confinement structure, and the weather enclosure. The mission need has been reaffirmed by the dispute resolution settlement agreement signed April 18, 2002.

In compliance with DOE Order 413.3, an external independent review (EIR) and a DOE-ID independent project review (IPR) team reviewed the project's readiness to proceed with phase 2/3 items. Currently, only the EIR team's draft report is available. They identified two essential findings, which the EIR team felt should be remedied prior to CD 2/3 approval. The first is the project baseline schedule does not reflect the current plan. The second is the project execution plan (PEP) is unsigned and also had two minor deficiencies. Upon your approval of CD 2/3 and the PEP, the new baseline schedule will be immediately implemented and the first essential finding remedied. The two minor PEP deficiencies have been corrected and your approval of the PEP will remedy the second essential finding. The EIR team understood their essential findings were readily cured and stated in their report, "In the view of the EIR/ICR [Independent cost review] Team, the Glove Box Excavator Method Project is a quality project with appropriately defined scope, consistent with the FFA/CO and subsequent agreements. The project is being well managed, and has an approach appropriate to accomplishing that scope on an accelerated schedule." Though I still take strong issue with whether these two items are indeed essential findings and am working this with the EIR team, these issues still do not preclude us moving forward with full construction activities.

Warren E. Bergholz, Jr.

-2-

The IPR team identified two issues with the PEP dealing with startup authority and the baseline change process. Both these items were corrected and the current version of the PEP reflects these changes. The IPR PDRI rated the project at better than 98%, with 96% being the minimum passing grade.

**Sensitivity:** Settlement of the OU 7-10 dispute has been achieved. Continued progress towards satisfactory excavation and retrieval of Pit 9 waste materials is required to meet the requirements of the settlement agreement and to avoid \$5 million in fines.

**Policy Impact:** None

**Recommendation:** Approve CD 2/3.



Jeff Snook  
GEM Project Manager

Approve

  
Warren E. Bergholz, Jr.

Date

6/26/02

Disapprove \_\_\_\_\_

Date \_\_\_\_\_

**NOTE:** The \$29.6M cost for this phase is total cost through construction and does not include the operations and D&D phases.

TO MIKE PRATT  
FM JEFF SNOOK

2 Pages

## 5.2 CD-2/3 Table of Documents

# **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

## **Excavator System**

### **Specifications**

SPC-351, Revision 0, Specification: Backhoe Safety-Related Modification for the OU 7-10 Glovebox Method Project

### **Drawings**

DWG-519859, Sheet 1 of 7, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Outer Seal Details and Assemblies

DWG-519859, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Outer Seal Details and Assemblies

DWG-519859, Sheet 3, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Outer Seal Details and Assemblies

DWG-519859, Sheet 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Outer Seal Details and Assemblies

DWG-519859, Sheet 5, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Outer Seal Details and Assemblies

DWG-519859, Sheet 6, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Outer Seal Details and Assemblies

DWG-519859, Sheet 7, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Outer Seal Details and Assemblies

DWG-519902, Sheet 1 of 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Inner Seal

DWG-519902, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Inner Seal

DWG-519902, Sheet 3, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Inner Seal

DWG-519902, Sheet 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Inner Seal

DWG-519903, Sheet 1 of 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Method Project Excavator Modifications Outer Seal Installation

DWG-519903, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Method Project Excavator Modifications Outer Seal Installation

DWG-519903, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Method Project Excavator Modifications Outer Seal Installation

DWG-519903, Sheet 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Method Project Excavator Modifications Outer Seal Installation

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-519906, Sheet 1 of 7, Revision 1, OU 7-10 Glovebox Excavator Method Project Backhoe Anchorage Structure Details and Assemblies

DWG-519906, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Backhoe Anchorage Structure Details and Assemblies

DWG-519906, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Backhoe Anchorage Structure Details and Assemblies

DWG-519906, Sheet 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Backhoe Anchorage Structure Details and Assemblies

DWG-519906, Sheet 5, Revision 1, OU 7-10 Glovebox Excavator Method Project Backhoe Anchorage Structure Details and Assemblies

DWG-519906, Sheet 6, Revision 1, OU 7-10 Glovebox Excavator Method Project Backhoe Anchorage Structure Details and Assemblies

DWG-519906, Sheet 7, Revision 1, OU 7-10 Glovebox Excavator Method Project Backhoe Anchorage Structure Details and Assemblies

DWG-519931, Sheet 1 of 11, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 4 Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 5, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 6, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 7 Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 8 Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 9, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 10, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 11, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications



## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-522045, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications Swing Stop Shim Defaults

SPC-401, Revision 0, Specification: Backhoe Modifications for the OU 7-10 Glovebox Excavator  
Method Project

- Auto Lube System
- Backhoe Flow Restrictions
- Drum Weighing System
- Fire Suppression
- Hydraulic Line Replacement
- Lock Check Valves
- Preparation for Boot Installation & Preparation for Field Use

### **Drawings**

DWG-519931, Sheet 1 of 11, Revision 1, OU 7-10 Glovebox Excavator Method Project  
Excavator Modifications WSE Modifications

DWG-519931, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications WSE Modifications

DWG-519931, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications WSE Modifications

DWG-519931, Sheet 4 Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications WSE Modifications

DWG-519931, Sheet 5, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications WSE Modifications

DWG-519931, Sheet 6, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications WSE Modifications

DWG-519931, Sheet 7 Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications WSE Modifications

DWG-519931, Sheet 8 Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications WSE Modifications

DWG-519931, Sheet 9, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications WSE Modifications

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-519931, Sheet 10, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519931, Sheet 11, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications WSE Modifications

DWG-519932, Sheet 1 of 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Existing Hydraulic Lines

DWG-519932, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Existing Hydraulic Lines

### **Packaging Glovebox System**

#### **Specifications**

SPC-387, Revision 1, Packaging Glovebox System for the OU 7-10 Glovebox Excavator Method Project

SPC-388, Revision 0, Packaging Glovebox System Lift Table for the OU 7-10 Glovebox Excavator Method Project

### **Packaging Glovebox System**

#### **Drawings**

DWG-519946, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 1,2 and 3 Control and Instrumentation Block Diagram, Legend & Abbreviations

DWG-519947, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 1 Hoist Motor, Trolley Motor and Pendant Wiring Diagram

DWG-519948, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 1 Safety Beam Wiring Diagram

DWG-519949, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 2 Hoist Motor, Trolley Motor and Pendant Wiring Diagram

DWG-519950, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 2 Safety Beam Wiring Diagram

DWG-519951, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 3 Hoist Motor, Trolley Motor and Pendant Wiring Diagram

DWG-519952, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 3 Safety Beam Wiring Diagram

DWG-519953, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 1, 2 and 3 Variable Frequency Drives (VFD) for Cart Motors Wiring Diagrams

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-519954, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 1, 2 and 3 Bulkhead Connection Layout, Elec Dist Panel Layout and Wire Schedule
- DWG-519955, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 1, 2 and 3 Junction Box Assemblies
- DWG-519956, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Cable Schedule
- DWG-519957, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) PGS 1 Fissile Monitoring System Connection Diagram and Cable Schedule
- DWG-522000, Sheet 1 of 2, Revision 0. OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Installation
- DWG-522000, Sheet 2, Revision 0. OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Installation
- DWG-522001, Sheet 1 of 4, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Assembly
- DWG-522001, Sheet 2, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Assembly
- DWG-522001, Sheet 3, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Assembly
- DWG-522001, Sheet 4, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Assembly
- DWG-522002, Sheet 1 of 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Work Platform Installation Details
- DWG-522002, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Work Platform Installation Details
- DWG-522002, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Work Platform Installation Details
- DWG-522002, Sheet 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Work Platform Installation Details
- DWG-522003, Sheet 1 of 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Drum Loadout Enclosure Installation
- DWG-522003, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Drum Loadout Enclosure Installation
- DWG-522003, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Drum Loadout Enclosure Installation
- DWG-522004, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Cart Rail System Details and Installation

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522004, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Rail System Details and Installation
- DWG-522005, Sheet 1 of 5, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Drive System Details
- DWG-522005, Sheet 2, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Drive System Details
- DWG-522005, Sheet 3, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Drive System Details
- DWG-522005, Sheet 4, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Drive System Details
- DWG-522005, Sheet 5, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Drive System Details
- DWG-522006, Sheet 1 of 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Ramp Details and Assembly
- DWG-522006, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Ramp Details and Assembly
- DWG-522006, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Ramp Details and Assembly
- DWG-522007, Sheet 1 of 4, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Rail Shield Detail and Assembly
- DWG-522007, Sheet 2, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Rail Shield Detail and Assembly
- DWG-522007, Sheet 3, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Rail Shield Detail and Assembly
- DWG-522007, Sheet 4, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Cart Rail Shield Detail and Assembly
- DWG-522008, Sheet 1 of 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Window Gloveport Assemblies
- DWG-522008, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Window Gloveport Assemblies
- DWG-522008, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Window Gloveport Assemblies
- DWG-522009, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drum Loadout Enclosure Assembly
- DWG-522009, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drum Loadout Enclosure Assembly

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522010, Sheet 1 of 5, Revision 1, OU 7-10 Glovebox Excavator Method ProjectPackaging  
Glovebox System (PGS) Drum Loadout Enclosure Details
- DWG-522010, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method ProjectPackaging  
Glovebox System (PGS) Drum Loadout Enclosure Details
- DWG-522010, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method ProjectPackaging  
Glovebox System (PGS) Drum Loadout Enclosure Details
- DWG-522010, Sheet 4, Revision 1, OU 7-10 Glovebox Excavator Method ProjectPackaging  
Glovebox System (PGS) Drum Loadout Enclosure Details
- DWG-522010, Sheet 5, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drum Loadout Enclosure Details
- DWG-522011, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drum Loadout Enclosure Frame Assembly
- DWG-522011, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drum Loadout Enclosure Frame Assembly
- DWG-522012, Sheet 1 of 5, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Work Platform Details and Assemblies
- DWG-522012, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Work Platform Details and Assemblies
- DWG-522012, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Work Platform Details and Assemblies
- DWG-522012, Sheet 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Work Platform Details and Assemblies
- DWG-522012, Sheet 5, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Work Platform Details and Assemblies
- \*\*DWG-522013, 2 Sheets, Revision 0, OU 7-10 Glovebox Excavator Method Packaging  
Glovebox System (PGS) Fissile Material Monitor Equipment Installation. (To Be Released at  
a Later Date)**
- DWG-522014, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox  
System (PGS) Fissile Material Monitor Load Cell Assemblies
- DWG-522015, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Fissile Material Monitor Shielding Assembly and Details
- DWG-522015, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Fissile Material Monitor Shielding Assembly and Details
- DWG-522016, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Fissile Material Digital Monitor Assembly and Details
- DWG-522016, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Fissile Material Digital Monitor Assembly and Details

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522017, Sheet 1 of 6, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Mainframe Upper Frame Details and Assembly
- DWG-522017, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Mainframe Upper Frame Details and Assembly
- DWG-522017, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Mainframe Upper Frame Details and Assembly
- DWG-522017, Sheet 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Mainframe Upper Frame Details and Assembly
- DWG-522017, Sheet 5, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Mainframe Upper Frame Details and Assembly
- DWG-522017, Sheet 6, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Mainframe Upper Frame Details and Assembly
- DWG-522018, Sheet 1 of 3, Revision 1, OU 7-10 Glovebox Excavator Method Project  
Packaging Glovebox System (PGS) Glovebox Mainframe Lower Support Member Details  
and Assemblies
- DWG-522018, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project  
Packaging Glovebox System (PGS) Glovebox Mainframe Lower Support Member Details  
and Assemblies
- DWG-522018, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project  
Packaging Glovebox System (PGS) Glovebox Mainframe Lower Support Member Details  
and Assemblies
- DWG-522019, Sheet 1 of 7, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Upper Glovebox Assembly
- DWG-522019, Sheet 2, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Upper Glovebox Assembly
- DWG-522019, Sheet 3, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Upper Glovebox Assembly
- DWG-522019, Sheet 4, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Upper Glovebox Assembly
- DWG-522019, Sheet 5, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Upper Glovebox Assembly
- DWG-522019, Sheet 6, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Upper Glovebox Assembly
- DWG-522019, Sheet 7, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Upper Glovebox Assembly
- DWG-522020, Sheet 1 of 5, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Glovebox Skin Multiple Bracket Installation

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522020, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Skin Multiple Bracket Installation
- DWG-522020, Sheet 3, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Skin Multiple Bracket Installation
- DWG-522020, Sheet 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Skin Multiple Bracket Installation
- DWG-522020, Sheet 5, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Skin Multiple Bracket Installation
- DWG-522021, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Loadout Port Assembly
- DWG-522023, Sheet 1 of 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Skin Penetration Details
- DWG-522023, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Skin Penetration Details
- DWG-522023, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Skin Penetration Details
- DWG-522024, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Electrical Equipment Installation
- DWG-522024, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Electrical Equipment Installation
- DWG-522025, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Loadout Funnel Detail
- DWG-522026, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) HEPA Filter Interface Details
- DWG-522027, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Loadout Port Cover Assembly and Details
- DWG-522027, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Loadout Port Cover Assembly and Details
- DWG-522028, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Ventilation Installation
- DWG-522028, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Ventilation Installation
- DWG-522029, Sheet 1 of 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Handling Tools Storage Bar Details and Assembly
- DWG-522029, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Handling Tools Storage Bar Details and Assembly
- DWG-522029, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System (PGS) Glovebox Handling Tools Storage Bar Details and Assembly

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522030, Sheet 1 of 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drive Cart Assembly and Details
- DWG-522030, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drive Cart Assembly and Details
- DWG-522030, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drive Cart Assembly and Details
- DWG-522030, Sheet 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drive Cart Assembly and Details
- DWG-522031, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drive Cart Liner Assembly and Details
- DWG-522031, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Drive Cart Liner Assembly and Details
- DWG-522032, Sheet 1 of 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Auxiliary Cart Assembly and Details
- DWG-522032, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Auxiliary Cart Assembly and Details
- DWG-522032, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Auxiliary Cart Assembly and Details
- DWG-522033, Sheet 1 of 3, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Firewater Piping Installation
- DWG-522033, Sheet 2, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Firewater Piping Installation
- DWG-522033, Sheet 3, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Firewater Piping Installation
- DWG-522034, Sheet 1 of 2, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Electrical Equipment Cable Festooning Installation
- DWG-522034, Sheet 2, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Electrical Equipment Cable Festooning Installation
- DWG-522035, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Auxiliary Cart Liner Details and Assembly
- DWG-522035, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Auxiliary Cart Liner Details and Assembly
- DWG-522036, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox  
System (PGS) Camera Mounting Bracket
- DWG-522039, Sheet 1 of 4, Revision 1, OU 7-10 Glovebox Excavation Method Project  
Packaging Glovebox System (PGS) Glovebox Window Schedule



## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-522039, Sheet 2, Revision 1, OU 7-10 Glovebox Excavation Method Project Packaging  
Glovebox System (PGS) Glovebox Window Schedule

DWG-522039, Sheet 3, Revision 1, OU 7-10 Glovebox Excavation Method Project Packaging  
Glovebox System (PGS) Glovebox Window Schedule

DWG-522039, Sheet 4, Revision 1, OU 7-10 Glovebox Excavation Method Project Packaging  
Glovebox System (PGS) Glovebox Window Schedule

DWG-522041, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Permacon Structure Interface Installation

DWG-522041, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Permacon Structure Interface Installation

DWG-522042, Sheet 1 of 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Hand Monitor Bracket

DWG-522042, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Hand Monitor Bracket

DWG-522043, Sheet 1 of 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Electrical Distribution Panel Assembly

DWG-522043, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Electrical Distribution Panel Assembly

DWG-522043, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System (PGS) Electrical Distribution Panel Assembly

DWG-522044, Revision 1, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox  
System (PGS) 55 and 85 Gallon Clean Drum Transfer Bag

DWG-522046, Revision 2, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox  
System (PGS) Drawing Index

DWG-522051, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox  
System (PGS) PGS 2 Fissile Monitoring System Connection Diagram and Cable Schedule

DWG-522052, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox  
System (PGS) PGS 3 Fissile Monitoring System Connection Diagram and Cable Schedule

### **Facility Design**

#### **Specifications**

SPC-389, Revision 0, Specification: Facility Package for the Operable Unit 7-10 (OU 7-10)  
Glovebox Excavator Method Project

SPC-391, Revision 0, Specification: HEPA Filter System for the OU 7-10 Glovebox Excavator  
Method Project

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

### **Drawings**

- DWG-522635, Sheet T-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Site Map and Area Map
- DWG-522636, Sheet T-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Drawing Index
- DWG-522637, Sheet T-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Drawing Index (cont) and General Acronyms
- DWG-522638, Sheet T-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Isometric Looking Northeast
- DWG-522639, Sheet T-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Isometric Looking Southwest
- DWG-522640, Sheet C-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Existing Site Plan
- DWG-522641, Sheet C-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Plot Plan and Section
- DWG-522642, Sheet C-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Enlarged Plot Plan
- DWG-522643, Sheet A-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Building Plan
- DWG-522644, Sheet A-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Building Section
- DWG-522645, Sheet A-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Building Section
- DWG-522646, Sheet A-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Elevations
- DWG-522647, Sheet A-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Phase I Installation Plan – Part “A”
- DWG-522648, Sheet A-6, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Phase I Installation Plan – Part “B”
- DWG-522649, Sheet A-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Phase I, Parts “A” & “B” Installation and Attachment Schedule
- DWG-522650, Sheet A-8, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Phase II Installation Plan
- DWG-522651, Sheet A-9, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Phase II Installation Plan and Attachment Schedule

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522652, Sheet A-10, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Phase III Installation Plan
- DWG-522653, Sheet A-11, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Phase III Installation Plan and Attachment Schedule
- DWG-522654, Sheet A-12, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Drum Cage Plan and Views
- DWG-522655, Sheet S-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Guard Rail and Safety Cable Plan, Sections, View and Detail
- DWG-522656, Sheet S-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Guard Rail Sections and Details
- DWG-522657, Sheet S-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Typical Anchoring Sections and Details
- DWG-522658, Sheet S-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Cart Protection Structure
- DWG-522659, Sheet S-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Cart Protection Structure Section & Details
- DWG-522660, Sheet S-6, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Cart Spill Pan Assembly
- DWG-522661, Sheet S-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Cart Spill Pan Details
- DWG-522662, Sheet S-8, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Cabinet Support Plan, Elevations, Isometric, and Detail
- DWG-522663, Sheet S-9, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Gas Bottle Rack Plans, Section and Elevation
- DWG-522664, Sheet S-10, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Light/Alarm Pole Support View and Detail
- DWG-522665, Sheet S-11, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Criticality Alarm System Light/Horn Support Details
- DWG-522666, Sheet S-12, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package H45S Hydraulic Hammer Stand
- DWG-522667, Sheet S-13, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package H45S Hydraulic Hammer Stand Details
- DWG-522668, Sheet S-14, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Drum Sizing Tray – Plan, Section and Details
- DWG-522669, Sheet S-15, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Framed Material Bin – Plan, Section and Detail

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522670, Sheet S-16, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Drum Puncture Tool and Stand
- DWG-522671, Sheet S-17, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Jaw Bucket And 16" Bucket Stands
- DWG-522672, Sheet S-18, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Probe Puller Cap Details and Section
- DWG-522673, Sheet S-19, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Overburden Cartridge and Chamber Assemblies
- DWG-522674, Sheet S-20, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Overburden Chamber Assembly
- DWG-522675, Sheet S-21, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Overburden Chamber Assembly View and Details
- DWG-522676, Sheet S-22, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Overburden Cartridge Plan, Views, and Detail
- DWG-522677, Sheet S-23, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Tool Table Plan, Views, Section and Details
- DWG-522678, Sheet S-24, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Tool Table Sections and Details
- DWG-522679, Sheet S-25, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Duct and Duct/Pipe Support Section and Details
- DWG-522680, Sheet S-26, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Pipe Support View and Detail
- DWG-522684, Sheet P-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Plant and Breathing Air General Notes, Legend, Abbreviations and P&ID
- DWG-522685, Sheet P-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Plant and Breathing Air Isometric
- DWG-522686, Sheet P-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Plant and Breathing Air Plan
- DWG-522687, Sheet P-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Plant and Breathing Air Enlarged Plot Plan and Sections
- DWG-522688, Sheet P-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Plant and Breathing Air Enlarged Plan, Section, and Detail
- DWG-522689, Sheet P-6, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Breathing Air Sections
- DWG-522690, Sheet P-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Dust Suppression General Notes, Legend, and Abbreviations

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-522691, Sheet P-8, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Dust Suppression P&ID

DWG-522692, Sheet P-9, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Dust Suppression System View

DWG-522693, Sheet P-10, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Dust Suppression System Plan

DWG-522694, Sheet P-11, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Dust Suppression System View and Sections

DWG-522695, Sheet P-12, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Dust Suppression System Sections

DWG-522696, Sheet FP-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Fire Protection General Notes, Legend and Abbreviations

DWG-522697, Sheet FP-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Building 671 Fire Protection System Isometric

DWG-522698, Sheet FP-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package WES Dry Fire Protection System Isometric

DWG-522699, Sheet FP-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package WES Dry Fire Protection System Upper Plan

DWG-522700, Sheet FP-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package WES Dry Fire Protection System Lower Plan

DWG-522701, Sheet FP-6, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package RCS Fire Protection Systems Isometric

DWG-522702, Sheet FP-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package RCS Fire Protection Piping Plan

DWG-522703, Sheet FP-8, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package RCS Dry and Manual Deluge Fire Protection Systems Plan

DWG-522704, Sheet FP-9, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Fire Protection Sections and Details

DWG-522705, Sheet FP-10, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Fire Protection Sections

DWG-522706, Sheet FP-11, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package PGS Mist Fire Protection System Isometric

DWG-522707, Sheet FP-12, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package PGS Mist Fire Protection System Plan and Section

DWG-522708, Sheet FP-13, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package PGS Mist Fire Protection System View and Detail

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522709, Sheet FP-14, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Fire Riser Modifications
- DWG-522710, Sheet FP-15, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Typical Fire Protection Pipe Hanger Details
- DWG-522711, Sheet HV-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Ventilation Legend and Abbreviations
- DWG-522712, Sheet HV-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Ventilation Flow Diagram
- DWG-522713, Sheet HV-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Facility Ventilation View
- DWG-522714, Sheet HV-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Facility Ventilation Plan
- DWG-522715, Sheet HV-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Enlarged Ventilation Plot Plan and Sections
- DWG-522716, Sheet HV-6, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Enlarged Ventilation Floor Plan
- DWG-522717, Sheet HV-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Ventilation View, Sections and Details
- DWG-522718, Sheet HV-8, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Ventilation View, Sections and Details
- DWG-522719, Sheet HV-9, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Ventilation Sections and Detail
- DWG-522720, Sheet HV-10, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Ventilation Sections
- DWG-522721, Sheet E-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Abbreviations and Legend
- DWG-522722, Sheet E-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package One Line Diagram
- DWG-522723, Sheet E-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Plot Plan
- DWG-522724, Sheet E-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Enlarged Plot Plan
- DWG-522725, Sheet E-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Grounding Plan
- DWG-522726, Sheet E-6, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package WES Lightning Protection Plan

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-522727, Sheet E-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Elevation - South

DWG-522728, Sheet E-8, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package WES Lightning Protection Elevation

DWG-522729, Sheet E-9, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Conduit and Cable Tray Plan

DWG-522730, Sheet E-10, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Electrical Equipment Plan

DWG-522731, Sheet E-11, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Normal Power Plan

DWG-522732, Sheet E-12, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Standby Power Plan

DWG-522733, Sheet E-13, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Heater Power Plan

DWG-522734, Sheet E-14, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package PGS Power Plan

DWG-522735, Sheet E-15, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Enlarged PGS Plan and View

DWG-522736, Sheet E-16, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package PGS Power Plan

DWG-522737, Sheet E-17, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package WES Lighting Floor Plan

DWG-522738, Sheet E-18, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package RCS Lighting Plan

DWG-522739, Sheet E-19, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Electrical Panel Layouts – Sheet 1

DWG-522740, Sheet E-20, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Electrical Panel Layouts – Sheet 2

DWG-522741, Sheet E-21, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Electrical Panel Layouts – Sheet 3

DWG-522742, Sheet E-22, Revision D, OU 7-10 Glovebox Excavator Method Project Facility  
Package Installation Details

DWG-522743, Sheet E-23, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Panel Schedules

DWG-522744, Sheet E-24, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Fixture Schedule and Detail

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-514376, Sheet E-25, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Lighting Control Diagrams

DWG-522746, Sheet E-26, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Typical Wiring Diagram

DWG-522747, Sheet E-27, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package PGS Power Block Diagram

DWG-522748, Sheet LSS-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Abbreviations and Legend

DWG-522749, Sheet LSS-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Life Safety System Riser Diagram

DWG-522750, Sheet LSS-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Plot Plan

DWG-522751, Sheet LSS-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Fire Riser Building Plan

DWG-522752, Sheet LSS-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Life Safety System Equipment Plan

DWG-522753, Sheet LSS-6, Revision 0, OU 7-10 Glovebox Excavator Method Project  
PGS/RCS/WES Life Safety Views and Section

DWG-522754, Sheet LSS-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Fire Alarm Panel Connection Diagram

DWG-522755, Sheet LSS-8, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Fire Alarm Device Connection Diagram

DWG-522756, Sheet LSS-9, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package CO Control Panel Connection Diagram

DWG-522757, Sheet LSS-10, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Life Safety Systems Typical Wiring Diagrams

### **Instrumentation and Control**

#### **Specifications**

SPC-392, Revision 0, Emissions Monitoring System for the OU 7-10 Glovebox Excavator Method Project

NOTE: Remaining systems are covered under Facilities Specification.



# **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

## **Drawings**

- DWG-522758, Sheet IN-1, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Instrumentation and Controls Abbreviations & Legend
- DWG-522759, Sheet IN-2, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Instrumentation and Controls Block Diagram
- DWG-522760, Sheet IN-3, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Control Panel WES-CP-800 Power Schematic Diagram
- DWG-522761, Sheet IN-4, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Analog Input Module 2 & Digital Input Module 5 Schematic Diagram
- DWG-522762, Sheet IN-5, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Digital Output Module 7 Schematic Diagram
- DWG-522763, Sheet IN-6, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Analog Input Module 2 Schematic Diagram
- DWG-522764, Sheet IN-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Digital Input Module 5 Schematic Diagram
- DWG-522765, Sheet IN-8, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Digital Output Module 7 Schematic Diagram
- DWG-522766, Sheet IN-9, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Excavator E-stop Beacon, Annunciators and Main Exhaust Fan Status Schematic  
Diagram
- DWG-522767, Sheet IN-10, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Equipment Plan
- DWG-522768, Sheet IN-11, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package WES-CP-800 Panel Layout and Control Net
- DWG-522769, Sheet IN-12, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package WES-CP-800 Enlarged Views
- DWG-522770, Sheet IN-13, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Instrumentation and Control Conduit And Cable Routing Plan
- DWG-522771, Sheet IN-14, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Instrumentation and Controls Junction Box Assembly Details
- DWG-522772, Sheet IN-15, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Junction Box Assembly Detail & Section
- DWG-522773, Sheet IN-16, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Instrumentation and Control Wire & Cable Schedule
- DWG-522774, Sheet IN-17, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Criticality Alarm System Block Diagram

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-522775, Sheet IN-18, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Criticality Alarm System Wiring Diagram

DWG-522776, Sheet IN-19, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package CA-CP-1 Criticality Alarm System Control Enclosure Assembly

DWG-522777, Sheet IN-20, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Criticality Alarm System Details

DWG-522778, Sheet IN-21, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Stack Monitoring System Block Diagram

DWG-522779, Sheet IN-22, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Stack Monitoring Plot Plan, Elevation and Views

DWG-522780, Sheet IN-23, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package CCTV System Abbreviations, Legend and General Notes

DWG-522781, Sheet IN-24, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package CCTV System RCS Cameras Cable Riser Diagram

DWG-522782, Sheet IN-25, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package CCTV System Glovebox Cameras Cable Riser Diagram

DWG-522783, Sheet IN-26, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Excavator Control Panel VM-CP-12 Proposed Layout

DWG-522784, Sheet IN-27, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Video Equipment Racks Proposed Layout

DWG-522785, Sheet IN-28, Revision B, OU 7-10 Glovebox Excavator Method Project Facility  
Package CCTV Cable Routing Plan

DWG-522786, Sheet IN-29, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Excavator Monitor Stand and Details

DWG-522787, Sheet IN-30, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package CCTV Camera Mounting

DWG-522788, Sheet IN-31, Revision 0, OU 7-10 Glovebox Excavator Method Project Facility  
Package Conduit Routing Plan to WMF – 646

Appendix – A – PLN-625: Packaging Glovebox System Assembly And Installation

Note: Appendix-A of the drawing package has drawings associated with PLN-652, verbiage found  
in appendix A of SPC-389

DWG-519895, Sheet A-7, Revision 0, OU 7-10 Glovebox Excavator Method Project Retrieval  
Confinement Structure Glovebox Connection Section and Details

DWG-522000, Sheet 1 of 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Installation

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-522000, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Installation
- DWG-522001, Sheet 1 of 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Assembly
- DWG-522001, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Assembly
- DWG-522001, Sheet 3, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Assembly
- DWG-522001, Sheet 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Assembly
- DWG-522002, Sheet 1 of 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Work Platform Installation
- DWG-522002, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Work Platform Installation
- DWG-522002, Sheet 3, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Work Platform Installation
- DWG-522002, Sheet 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Work Platform Installation
- DWG-522004, Sheet 1 of 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Frame, Cart Rail And Drive System Installation
- DWG-522004, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Glovebox Frame, Cart Rail And Drive System Installation
- NOTE: No Appendix-B in the drawing package, verbiage found in SPC-389, Appendix B, no  
drawings associated
- Appendix-C – PLN-1076: Sequential Process Narrative for “RCS” Backhoe Installation
- Note: Appendix-C of the drawing package has drawings associated with PLN-1076: Sequential  
Process Narrative for “RGS” Backhoe Installation, verbiage found in Appendix C of SPC-389
- DWG-519933, Sheet 1 of 7, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications Excavator Installation
- DWG-519933, Sheet 2, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications Excavator Installation
- DWG-519933, Sheet 3, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications Excavator Installation
- DWG-519933, Sheet 4, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator  
Modifications Excavator Installation

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

- DWG-519933, Sheet 5, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Excavator Installation
- DWG-519933, Sheet 6, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Excavator Installation
- DWG-519933, Sheet 7, Revision 1, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Excavator Installation
- DWG-519934, Sheet 1 of 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Excavator Catch Basins
- DWG-519934, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Excavator Modifications Excavator Catch Basins
- Appendix-D – PLN-1088: Packaging Glovebox System Drum Loadout Enclosure Assembly Installation
- NOTE: Appendix-D of drawing package has drawings associated with PLN-1088: Packaging Glovebox System Drum Loadout Enclosure Assembly Installation, verbiage found in appendix D of SPC-389
- DWG-522003, Sheet 1 of 3, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Installation
- DWG-522003, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Installation
- DWG-522003, Sheet 3, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Installation
- DWG-522009, Sheet 1 of 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Assembly
- DWG-522009, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Assembly
- DWG-522010, Sheet 1 of 5, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Details
- DWG-522010, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Details
- DWG-522010, Sheet 3, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Details
- DWG-522010, Sheet 4, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Details
- DWG-522010, Sheet 5, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging Glovebox System Drum Loadout Enclosure Details

## **OU 7-10 Glovebox Excavator Method Project CD 2/3 Engineering Deliverables List**

DWG-522011, Sheet 1 of 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Drum Loadout Enclosure Frame Assembly

DWG-522011, Sheet 2, Revision 0, OU 7-10 Glovebox Excavator Method Project Packaging  
Glovebox System Drum Loadout Enclosure Fame Assembly





September 17, 2002

CCN 35863

Mr. Jeffrey G. Snook  
Project Manager  
U.S. Department of Energy  
Idaho Operations Office  
850 Energy Drive, MS 1222  
Idaho Falls, ID 83401-1563

**CONTRACT NO. DE-AC07-99ID13727 - OPERABLE UNIT 7-10 GLOVEBOX EXCAVATOR  
METHOD PROJECT RESPONSE TO AGENCY COMMENTS ON THE CD-2/3 DOCUMENT  
SUBMITTAL**

- References: (a) Dean Nygard letter to Jeff Snook, WAG 7, OU 7-10 Glovebox Excavator  
Method Critical Decision 2/3 Document Review, August 15, 2002  
(b) Wayne Pierre letter to Katie Hain, Review of Operable Unit 7-10 Glovebox  
Excavator Method Project Critical Decision 2/3 Documents Package, August 14,  
2002

Dear Mr. Snook:

Enclosed are the Bechtel BWXT Idaho, LLC responses to the U.S. Environmental Protection Agency  
and Idaho Department of Environmental Quality comments that were transmitted via the above  
references.

If you have any questions or comments, please contact Mike Pratt at 526-5565 or John Schaffer  
at 526-3029.

Sincerely,

Michael J. Graham, Manager of Projects  
Environmental Restoration Program

JDB:mp

Enclosure

cc: (w/o Encl)

P. H. Divjak, MS 3898

R. J. Hoyles, DOE-ID, MS 1221

R. A. Rossell, MS 3810

B. D. Shipp, MS 3898

S. G. Stiger, MS 3898

Mr. Jeffrey G. Snook  
September 17, 2002  
CCN 35863  
Page 2

bcc: (w/o Encl)  
J. D. Bryan, (w/Encl), MS 3920  
M. B. Pratt, MS 3920 ✓  
J. M. Schaffer, MS 3920  
OU 7-10 Project Files, (w/Encl)  
ARDC Files, (w/Encl), MS 3922  
OU 7-10 Letter File  
Correspondence Control, MS 3106  
M. J. Graham File (MJG-200-02)

Uniform File Code: 6400

Disposition Authority: ENV1-k-2-b

Retention Schedule: Cutoff at project completion. Destroy 25 years after project completion. EPI

NOTE: Original disposition authority, retention schedule, and Uniform Filing Code applied by the sender may not be appropriate for all recipients. Make adjustments as needed.



**OU 7-10 Glovebox Excavator Method Project - Responses to Agency Comments on the  
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- SPC-351, Specification: OU 7-10 Glovebox Excavator Method Project **Backhoe Modifications**, Rev. 0, August 1, 2002.
- SPC-401, **Backhoe Modifications** – Auto Lube System, Backhoe Flow Restrictions, Boom Cylinder Mod, Drum Weighing System, Fire Suppression, Hydraulic Line Replacement, Lock Check Valves, Prep for Boot and Prep for Field Use, Revision 0, August 1, 2002.
- SPC-387, OU 7-10 Glovebox Excavator Method Project **Packaging Glovebox System**, Revision 1, July 19, 2002.
- SPC-388, OU 7-10 Glovebox Excavator Method Project **Packaging Glovebox System Lift Table**, Revision 0, July 10, 2002.
- SPC-389, Specification: Operable Unit 7-10 (OU 7-10) Glovebox Excavator Method Project **Facilities Package**, Revision 0, July 14, 2002.
- SPC-391, OU 7-10 Glovebox Excavator Method Procurement Specification – **HEPA Filter Systems**, Revision 1, August 2, 2002.
- SPC-392, Procurement Specification for OU 7-10 Glovebox Excavator Method **Stack Monitoring System**, Revision 0, July 24, 2002.
- Facility Design Drawings (as noted)

Note: Comments marked with \*\*\* are significant.

REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	01	SPC-351	General	01. How is fueling of the backhoe excavator handled? (JM)	Fuel is transported into the WES in 33-gallon drums and then the backhoe is filled from the drum through a hand pump. The 33-gallon drum is then removed from the WES when fueling is complete.
EPA	02	SPC-351 / SPC-401	Sheet 4, General	02. Is there a specific order in which the modifications must be made to the backhoe? A sequential narrative is presented in SPC-389 for the actual attachment of the backhoe to the RCS. (GG)	Excavator procurement, modification, and installation flow: <ol style="list-style-type: none"> <li>1. INEEL purchases the backhoe through GSA contract.</li> <li>2. Western States Equip. (WSE) takes delivery and removes items as required for inner and outer seal installation. WSE ships backhoe to NQA-1 fabricator.</li> <li>3. NQA-1 fabricator takes delivery and installs seals and fabricates the supports. The backhoe is then shipped to WSE and the supports shipped to INEEL.</li> <li>4. WSE reinstalls the hydraulics and accessories and then ships backhoe to INEEL.</li> <li>5. The INEEL calibrates the drum weighing system.</li> <li>6. M&amp;E contractor takes delivery of the backhoe under the Facility Package contract. M&amp;E contractor installs supports and backhoe.</li> <li>7. WSE performs final backhoe hydraulic modifications.</li> </ol>
EPA	03	SPC-401	Page 12 of 16, Sect. 4, Drum Weighing System	03.** The operational testing is presented in section 7.4 of this specification. No accuracy requirements are stated. What accuracy is expected for this method of weighing? Many factors influence the weight measurement by this hydraulic pressure method. The "calibration" derived under the "ideal" vendor shop conditions will not represent the real operational/retrieval conditions. What operational weight uncertainty is acceptable? (JM)	Operational testing of the drum weighing will be performed at the backhoe modification subcontractor's facility to ensure system operability. The INEEL Calibration Lab will perform the system calibration prior to installation of the backhoe. Accuracy of the weighing system is required to be +/- 20 lbs. Checks of the drum weighing system calibration can be performed during retrieval operations by attaching to and "weighing" end-effectors of known weight.
EPA	04	SPC-401	Page 2 of 16, Sect. 5, Fire Suppres.	04. Please indicate type, quantity or coverage of detectors for backhoe. Provide sketch of intentions and design. (DR)	The ANSUL LTA-101-30 pre-engineered fire suppression system that has been specified is a commercially available unit that is designed for under-the-hood, engine compartment fire suppression. Similar systems are routinely installed on large equipment used in the mining industry. Since BBWI did not perform the design, these details are not available at this time. They will be provided by the subcontractor when the required vendor data is submitted. Vendor design detail and submittals are not in the scope of information to be provided for agency review. The system will be installed by the backhoe supplier and will be in accordance with its UL listing.

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REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	05	SPC-401	Page 2 of 16, Sect. 5, Fire Suppres., General	05. Please provide design modifications for backhoe exhaust and protection for personnel, such as double wall or insulation. (DR)	No modifications have been made to the backhoe diesel exhaust system. A fume exhaust system will be installed in the facility that involves placement of a fan-driven duct over the backhoe exhaust to direct the fumes outside. The overhead location of the fume exhaust system poses no hazard to personnel. Details are provided on Dwg. #522719, already submitted to the agencies.
EPA	06	SPC-401	Page 2 of 16, Sect. 5, Fire Suppres., General	06. Please provide provisions for catch pans/basins to contain hydraulic fluid leaks. (DR)	Catch pans/basins are already planned to be located under the frame of the backhoe, battery box, and fuel tank. Please refer to DWGs #519933 and #519934.
EPA	07	SPC-401	General	07. Are there provisions to remove all of the modifications to the backhoe after the project is complete so that it can be reused? If so, who will perform this work? (GG)	Such provisions have not been developed at this time and are not within the scope of the CD-2/3 design submittal. However, all equipment modifications are reversible. Future use of the backhoe will depend on the degree of contamination.
EPA	08	SPC-401	General	08. Who is responsible for the transportation, safety and insurance for the backhoe during transportation to the subcontractors' individual shops for modifications? (GG)	Activities such as those referenced in this comment are not within the scope of the Glovebox Excavator Method Project CD-2/3 submittal. BBWI Supply Chain Management will ensure that the risk of damage is addressed in subcontracts that include transfer of the backhoe.
EPA	09	SPC-387	Page 26 of 35, Sect. 6.2, General	09. Although the data may not be accurate, the Waste O Scope database identifies a number of drums which weigh an average of 500 lbs or more (e.g., RFO DOW 17H). Is there a safety factor assumed for the operational rating and if so, should the cart be tested to near that limit?	The excavator weighing system (with its accuracy of +/- 20 lbs) will weigh the waste prior to placement in the PGS drive cart. Any drums that weigh over 330 lbs will be sized in the pit prior to loading in the PGS drive cart. Although the carts can handle higher loads, no analysis have been performed to establish a higher rating (i.e., 350 lbs). Because of the upstream control, no specific drum weight safety factor is deemed necessary beyond the allowable stresses utilized in the structural design.
EPA	10	SPC-388	Page 9 & 10 of 15, General	10. Please indicated the allowable provisions for the lift table if it gets stuck? Is there a way to reach around the opening in the FFS to gain access to the moving parts? Is the top removable once it is installed? (GG)	<p>The only access to a lift table will be from the top. There is no access from the side through the FFS. The lift table upper platform can be removed if required. However, it would probably be easier to remove the lift table from the pit for repair.</p> <p>Additionally, the design of the lift tables to be used in the drum loadout enclosure will be based on existing off-the-shelf commercial designs. This type of commercial lift table has been proven to be quite reliable with proper maintenance. The risk of a lift table not functioning during the operations period is considered insignificant. Finally, replicate lift tables will be used in the mockup, providing opportunity for operating experience prior to use in the facility.</p>
EPA	11	SPC-389	Page 5 of 8, Sect. 15980	11. Please include validation and commissioning of alarm systems/with results, to prove effectiveness of systems. (DR)	Testing of the instrumentation associated with the ventilation system is covered in specification section 16810, pg. 6 of 7, lines 30 - 38. The following reference will be added to section 15980, pg. 4, line 34: "The Testing, Adjusting, and Balancing (TAB) subcontractor shall coordinate the H&V System Test with the associated instrumentation test (ref: specification section 16810, pg. 6 of 7, lines 30 - 38)."
EPA	12	SPC-389	Page 8 of 12, Sect. 15800	12. Please indicate temperature controls such as thermostats or interlock to another system. (DR)	Cross reference and specifications for electrical, and instrumentation and controls are in other specifications and drawings (i.e., specifications section series 16XXX and drawing 522712, etc.)

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REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	13	SPC-389	Page 8 of 12, Sect. 16630	13. There are 4 video cameras in the RCS but only 1 video recorder (with one in standby). Will the standby video recorder be used to tape the feed from one of the other 3 cameras in the RCS?	The recorded feed is limited to the feed selected by the excavator operator. There is no project requirement for the standby video recorder to tape feeds from one of the other 3 cameras. The standby recorder is a backup for the primary recorder if it should fail.
EPA	14	Facility Design Dwgs	Dwg. # 522657, Sheet S-3	14. Do the Glovebox column baseplates come attached to the Glovebox or are they shipped separately? Will the baseplates be field welded or shop welded? If they are to be field welded, please indicate the weld size or appropriate minimum weld size symbol. (GG)	The base plates will be attached to the glovebox structural supports in the fabricator's shop. The glovebox structural supports (with the base plates installed) will be shipped separately from the glovebox and will be assembled in the field.
EPA	15	Facility Design Dwgs	Dwg. # 522670, Sheet S-16	15. Please provide the attachment method between the aluminum puncture rod and the upper carbon steel assembly. It is difficult to braise a connection between aluminum and steel that can withstand substantial loads. What was the reasoning for using aluminum for the construction of the drum puncture tool? (GG)	The attachment method, as shown on DWG# 522670, is a 2-inch, 4-1/2 thread per inch, threaded connection. This type of attachment allows the tool to be replaced if damaged. Aluminum has been specified for the puncture tool to prevent the generation of sparks (a potential source of ignition).
EPA	16	Facility Design Dwgs	Dwg. # 522018, 1, 2, & 3	16. Please include a note for the fabricator to mill column ends to bear on the base plates prior to attachment of the base plates. (GG)	Milling the ends of the glovebox structural supports will not be required in this application. The vertical and lateral structural supports will be cut and arranged to provide proper fit up in the controlled environment of the fabricator's shop. A 1/4 inch fillet weld will be used to attach the structural supports to the base plates.
EPA	17	Facility Design Dwgs / SPC-389	Dwg pages 4, 5, and 76 / Sections 15800, 15801, and 15980	17. Reference drawings pp. 4, 5 and 76. [1] The ventilation air inlet is at the top center of the WES. The principal airflow into the RCS occurs from the HEPA filter bank at the north end floor level of the WES. For a better air turnover distribution within the WES, some ducting of the inlet air to the South end of the WES would be beneficial. [2] Also, the air inlet to the PGS is at the upper far end of the glovebox structure. If no inlet distribution ducting is provided within the PGS, the fissile monitoring location can be threatened by the packaging operations involving the Pu sources. [3] This inlet air design may result in some flow turbulence that moves contamination to the end region of the glovebox, resulting in more decon effort by the glovebox operator. [4] Also, the inlet air HEPA filter is located a considerable distance from the PGS. To eliminate long ductwork on the "contamination" side, and save floor space, why not locate the filters on top of the glovebox? (JM)	<p>This comment involves several separate but related comments. The responses provided below reflect the separation of the initial comment as noted using bracketed numbers inserted into the comment.</p> <p>[1] The airflow from the inlet referenced in the comment is in excess of that required by the building codes; driven by the RCS flow requirements. This, along with the heater's fans being on continuously, will provide for adequate WES air distribution.</p> <p>[2] First, the flow of air through the PGS is from the end of the PGS to the RCS. Air entering the PGS will be clean and not influence the fissile material monitor (FMM). This airflow should take any airborne contamination generated during PGS operations towards the RCS and away from the FMM chamber. However, with turbulent flow, back eddies could carry radioactive contamination in the direction of the FMM chamber and actually deposit this contamination in the chamber since the top of the chamber is open. To address this possibility, the FMM performs a continuous background check when the FMM is not performing a specimen assay. Should a contamination take place during an assay, the FMM will detect the difference between the before and after reading and flag the operator that an unacceptable condition has developed during the assay. The previous specimen assay would no longer be valid and have to be repeated. In summary, the FMM constantly monitors the radiological background for unacceptable conditions. These may result from high readings or sudden changes.</p> <p>[3] The ventilation into and out of the gloveboxes is integral to many design considerations (i.e. contamination flow direction, mixing of possible carbon tetrachloride in the air stream, location of monitors, functionality of the gloveboxes themselves). The current design is based on these considerations, input from Radcon for ALARA and</p>

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REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
					decon, and the expectancy to decon this area of the glovebox as well as other glovebox areas periodically.  [4] The filters are located to allow for ease of HEPA filter change-out.
EPA	18	Facility Design Dwg. / SPC-389	Page 9 & 16 / Sections 15800, 15801, 15980	18. Reference drawings pp. 9 and 16. Continuous air monitoring equipment is shown on this building plan. Past discussions have indicated RCS air monitoring. It is not obvious that provisions have been made for monitoring air within the RCS. Are some of these CAMs directed at RCS monitoring (are there CAMs on the RCS air exit before the HEPAs)? If not, how will one determine if additional actions are required during a retrieval event (i.e. to activate additional dust/contamination suppression, identify an item that may need special handling, etc.)? Quickly detecting a significant release is important to operations control and future D&D efforts. (JM)	There are no provisions to have CAMs permanently installed to monitor air from the RCS. There are three locations where radiological air samples can be taken from inside the RCS. These locations are shown in 1) the Penetration Schedule, Item 42, Dwg. #519891; 2) SPC-391, section 3.4, page 18, Rev. 0; and 3) in Dwg. #522717. Air samples can be taken from these locations when operational conditions in the RCS warrant taking a radiological air sample.  The large increases in radiation levels on the installed HEPA filter housing will be used as an indicator of abnormally high airborne activity in the RCS. There is a Remote Area Radiation Monitor (RAM) installed in close proximity to the HEPAs to provide continuous radiation monitoring.
EPA	19	SPC-389	Page 7 of 7, Sect. 13910, Line 10	19. Please provide time duration for test. (DR)	The hydrostatic test has a duration of 2 hours per NFPA 13, Chapter 10.
EPA	20	SPC-389	Page 7 of -, Sect. 15800, Line 16	20. Please define "CS" as carbon steel. (DR)	CS is commonly understood to mean "carbon steel" by those in this industry. Further definition is not deemed necessary since the package has been bid and no questions were raised regarding this acronym.
EPA	21	SPC-389	Page 1 of 8, Sect. 15801	21. Please define acronyms used. (DR)	HEPA and GFE are commonly understood to mean "high efficiency particulate air" and "government furnished equipment", respectively, by those in this industry. Further definition is not deemed necessary since the package has been bid and no questions were raised regarding acronyms. Definitions for other acronyms were provided in the specification.
EPA	22	SPC-389	Page 10 of 10, Sect. 05060	22. Please indicate a percentage of welds (and type of welds) that are to be tested using Liquid Penetrant examination. (GG)	PT examination is required for all weld repairs (i.e., 100%) as identified in Section 05060, page 8 of 10. These are the only welds to be tested using liquid penetrant examination, however, all welds will receive visual inspection.
EPA	23	SPC-391	General	23. It has been noted in other sections that downtime for systems to be 4 hours maximum. Please review [how] filter replacement can be accomplished in this time frame. (DR)	Filter replacement is not constrained by the 4-hour maximum downtime limit. This system is fully redundant and isolatable to allow concurrent filter replacement and waste excavation and retrieval operations.
EPA	24	Facility Design Dwg	Sheet HV-2, Dwg. # 522712	24. Please indicate if backhoe and generator exhaust are intermittent or continuous, for air balancing and clarity. (DR)	Air intake by these diesel engines is not significant to balancing the WES H&V system. These engines operate intermittently and are vented to the outside.

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REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	25	Facility Design Dwgs	Sheet HV-2, Dwg. # 522712	25. Is stack drainage contaminated/hazardous waste? Please review. (DR)	Engineering judgment indicates that, while liquid accumulation (e.g., from condensate) at the bottom of the stack is not expected, it cannot be completely ruled out. In the event that liquid does accumulate, the water is not expected to be associated with above background levels of radionuclide contamination based on the location downstream of the redundant HEPA filtration system. An operational procedure will be developed to routinely check the stack for liquid accumulation and drain, if present, using the valve located at the base of the stack. Any liquid obtained will be containerized and managed as hazardous waste pending final hazardous waste determination.
EPA	26	Facility Design Dwgs	Sheet HV-2, Dwg. # 522715	26. Please review requirements for belt guards, intake guards, weatherproof covers for fans. (DR)	This information is identified in specification section 15800, page 9 lines 2 – 5 for fan accessories.
EPA	27	Facility Design Dwgs	Sheet HV-2, Dwg. # 522715	27. Please review outlet configuration of backup fan. Possible increase in static due to turbulence from elbows may occur. (DR)	The fan configuration as shown on the drawings is required in order to meet the equivalency method for meeting the requirements of ANSI/HPS N13.1-1999 "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities." The double fan configuration is based on an existing ANSI qualified emissions monitoring system at LANL.
EPA	28	Facility Design Dwgs	Sheet HV-2, Dwg. # 522715	28. Please review vibration requirements. (DR)	Vibration requirements were considered in the specification of H&V equipment.
EPA	29	Facility Design Dwgs	Sheet HV-9, Dwg. # 522719	29. Please review requirements for insulation/protection of backhoe exhaust. (DR)	As shown in Section F of the identified drawing, 2" thick KNUFF pipe insulation (ASTM C795, C1136, and C547 Type I) with aluminum jacket over the insulation and mastic ends will be installed on the backhoe exhaust fan discharge duct. This insulation is necessary for protection of WES fabric. No other insulation is deemed necessary (i.e., for personnel protection) due to the overhead location of the fume exhaust system.
EPA	30	Facility Design Dwgs	Sheet HV-10, Dwg. # 522720	30. Please review OA intake requirements. OA is not heated and may induce freezing IE in nearby fire protection or water containing systems. (DR)	The fire protection systems are dry pipe systems and, where determined necessary, additional or directed heat has been supplied.
EPA	31	Facility Design Dwgs	Sheet IN-24, Dwg. # 522781	31. It does not appear that VM_MON_5 has any control of monitor input selection? During non-operational periods, there may be value in evaluating the condition of the excavation or the glovebox from the conference room of WM-646.	The project has no requirement to provide VM_MON_5 with input selection control from the conference room of WMF-646. Video feed to this monitor is the same as that selected by the excavator operator. Also, since operations will be conducted around the clock (i.e., 24 hours per day, 7 days per week) until completion of facility shutdown, the need for an input feed control feature is not anticipated for non-operational periods. Should the need exist for directing camera control from the WMF-646 conference room between periods of excavation, instructions can be provided to the excavator system operator via radio.
EPA	32	Facility Design Dwgs	Sheet P-1, Dwg. # 522684	32. Please define quantity, controls and design of heat tracing for plant air. Indicate insulation type and compatibility with heat trace. (DR)	This information is provided in specification section 15202 "Compressed Air Piping" Pg. 7 of 13, Lines 1-8.
EPA	33	Facility Design Dwgs	Sheet P-1, Dwg. # 522684	33. Please indicate quantity of unions to be included. (DR)	Unions are considered fittings and are specified to be provided "as required" to allow flexibility of field routing.

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REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	34	Facility Design Dwgs	Sheet P-1, Dwg. # 522720	34. Please indicate where drain is to terminate to (i.e., floor drain, etc.). (DR)	Note: Sheet P-1 is Dwg. #522684. Drains are routed to carboys (see zone A/3 of drawing 522684). There are no building drains nor can the condensate drain onto the ground. The drain lines associated with valve PA-SHV-8 in Zone A/5 and BA-SHB-5 in Zone B/6 of the drawing are capped and are provided for use during D&D&D as needed.
EPA	35	Facility Design Dwgs	Sheet P-5, Dwg. # 522688	35. Please illustrate mounting details of equipment to Wes. Indicate floor mounting and bolt attachments. Indicate floor mounting and bolt attachments (DR)	<p>Design information on the mounting of plant/breathing air equipment and piping as provided in issued BBWI specifications and drawings is as follows:</p> <ul style="list-style-type: none"> <li>• Floor mounting of receiver tank and oil separator: <ul style="list-style-type: none"> <li>- Per Dwg. #522651 (via Dwg. #522688, Note 3): "Anchor to floor using self tapping screws per spec"</li> <li>- Per SPC-389, Section 05100, page 4 of 6, line 3: Buildex Tek's, hex head carbon steel #12 x 1-1/2" x 5/16 AF.</li> <li>- Per SPC-389, Section 15202, page 5 of 13, line 25: "A base shall provide attachment points for being secured down."</li> <li>- Per SPC-389, Section 15202, page 11 of 13, lines 1 – 5: "Equipment, Fixtures, Etc."</li> </ul> </li> <li>• Mounting of piping to WES: <ul style="list-style-type: none"> <li>- Per Dwg. #522688, Note 4: "Final attachment details of conduit and piping supports to WES perimeter structural supports and intermediate structural supports are pending final determination of WES supplier contract. Attachment method will be accomplished through a bolting configuration."</li> <li>- Per SPC-389, Section 15202, page 11 of 13, lines 15 – 43: "Hangars, Supports and Fasteners."</li> </ul> </li> </ul> <p>Vendor design detail and submittals are not in the scope of information to be provided for agency review.</p>
EPA	36	Facility Design Dwgs / SPC- 389	Page 1, Sect. 16730, Line 43	36. Line 43, Page 1 states that the Carbon Monoxide detectors are located inside the RCS. This statement must be in error because there is no good reason to put a carbon monoxide monitor within the RCS. The drawing (p. 115) indicates that the detectors are outside the RCS (ceiling mounted). (JM)	<p>The CO detectors <u>are</u> located inside the RCS as part of the digface/RCS fire detection system and the Fire Hazard Analysis (FHA) requires their installation. Their purpose is to detect a small, smoldering fire inside the RCS at its earliest stage so that suppression can take place before any damage occurs.</p> <p>The CO detectors (shown in LSS-5, Dwg. #522752, as CO-A-1 and CO-A-2) are located on the <u>inside</u> of the exterior RCS walls consistent with the specification. Dwg. 522753 sections H and K show the installation location and interior location, respectively. Also, no indication is given in DWG-522752 (p. 115) that these detectors are ceiling mounted. They are to be installed at 24 inches above the floor as per SPC-389.</p>

**OU 7-10 Glovebox Excavator Method Project - Responses to Agency Comments on the  
CD-2/3 Document Submittal**

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REVIEWER	#	DOC	PAGE/ SEC/ PARA	COMMENT	RESPONSE
EPA	37	Appendix D - Packaging Glovebox System Drum Loadout Enclosure Assembly Installation	General	37. Upon review of the assembly and installation drawings for the drum load out enclosure, and the overall PGS, it appears that the worker within the enclosure will have very limited space in which to operate (person, survey equipment, empty drum, HEPA vacuum, height restriction, etc.). Has the sizing of the enclosure been established through mockup testing with realistic operational constraints? Some discussion of the potential problems already addressed, and the sequence of operational events for each of the drums and drum positions is necessary to establish (from the reviewer's perspective) the operational adequacy of the enclosure? (JM)	Yes, the sizing of the enclosure has been established through the use of mockups. An initial glovebox mockup was constructed at the Test Reactor Area to establish design parameters relative to various operational events including drum handling and changeout. Additionally, the completed drum bag out enclosure design has been mocked up in the full-scale mockup at the RWMC Cold Test Pit. All operations of equipment and drum movements within the tent will be demonstrated and/or tested using this mockup. Although unlikely, adjustments to the real enclosures can be made if the mockup demonstration/testing identifies any operational problems or inadequacies.
EPA	38	SPC-392	Page 12 of 14, Sect. 5.3.1.1	38. Please review Section 5.3.1.1 for temperature range. Operation conditions to be +140°F. (DR)	This typographical error has been noted and Section 5.3.1.1, page 12 of 14, of SPC-392 will be corrected to read "...-30 to +120°F, ...". This correction is consistent with the temperature range identified in Section 5.2.1.2, on page 7 of 14.
IDEQ	39	SPC-389	Page 7 of 7, Sect. 13910	01. The hydrostatic test of the "Water Mist System" does not specify the duration of the test. Also, what are the requirements for the test? For example, relief valves, maximum test pressure, test fluid requirements, etc. Please clarify.	The duration of the test is 2 hours per NFPA 2001 and NFPA 13.  The subcontractor, in his hydrostatic test submittal, determines the details of the test. The design standard does not require a relief valve. The test will be conducted at a pressure of 200 psi. The test fluid will be water. No leakage is allowed during the test.
IDEQ	40	SPC-389	Page 8 of 8, Sect. 13911	02. The hydrostatic test of the "Dry Pipe Fire Protection Systems" does not address what actions will be taken to ensure the piping is drained of testing fluid (water?) after testing is complete. Also, what are the requirements for the test? For example, relief valves, maximum test pressure, test fluid requirements, etc. Please clarify.	The draining and disposal of the water is the responsibility of the subcontractor and will be identified in the hydrostatic test procedure, which will be reviewed by BBWI.  The test duration is 2 hours per NFPA 2001 and NFPA 13. The subcontractor, in his hydrostatic test submittal, determines the details of the test. The design standard does not require a relief valve. The test will be conducted at a pressure of 200 psi. The test fluid will be water. No leakage is allowed during the test.
IDEQ	41	SPC-389	Page 6 of 6, Sect. 13914	03. The hydrostatic test of the "Manual Deluge - Fixed Nozzle System" does not state all testing requirements. For example, relief valves, maximum test pressure, test fluid requirements, etc. Please clarify.	The duration of the test is 2 hours per NFPA 2001 and NFPA 13.  The subcontractor, in his hydrostatic test submittal, determines the details of the test. The design standard does not require a relief valve. The test will be conducted at a pressure of 200 psi. The test fluid will be water. No leakage is allowed during the test.
IDEQ	42	SPC-389	Page 3 of 3, Sect. 16450	04. The testing for the ground system states "Perform a ground resistance test". Please add verbiage that indicates what reference is used for this test. For example, "Perform a ground resistance test in accordance with.....".	SPC-389 will be revised to indicate that the ground resistance test will be performed in accordance with IEEE Standard 142, "Grounding of Industrial and Commercial Power Systems."